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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/120,608	07/22/1998	LORETTA GREZZO PAGE	IJ-0005	2363

23906 7590 07/29/2003

E I DU PONT DE NEMOURS AND COMPANY
LEGAL PATENT RECORDS CENTER
BARLEY MILL PLAZA 25/1128
4417 LANCASTER PIKE
WILMINGTON, DE 19805

EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

29

DATE MAILED: 07/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-29

Office Action Summary	Application No.	Applicant(s)	
	09/120,608	PAGE ET AL.	
	Examiner	Art Unit	
	Callie E. Shosho	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 13-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al. (EP 0851014) in view of Ma et al. '698 (U.S. 5,085,698).

The rejection is adequately set forth in paragraph 4 of the office action mailed 1/23/02, Paper No. 26, and is incorporated here by reference.

Response to Arguments

3. Applicants' arguments filed 5/13/03 have been fully considered but they are not persuasive.

Specifically, applicants argue that Ma et al. '014 is not a relevant reference against the present claims because, in direct contrast to the present claims, the graft copolymer of Ma is not soluble in the aqueous vehicle while the present claims require graft copolymer which is soluble in the aqueous vehicle.

However, examiner's position remains that page 4, lines 21-30 of Ma et al. '014 disclose that the hydrosol contains functional groups which affect its solubility. In light of Ma et al. '014's statement on page 4, lines 28-29 that if the hydrosol contains too many functional groups "it will become completely soluble in the aqueous medium", it is clear that the functional groups

of Ma et al. '014 do function so as to make the hydrosol soluble in the aqueous medium or vehicle as presently claimed.

It is noted that while Ma et al. '014 teach away from complete solubility (so that smear resistance will not be diminished), the reference clearly discloses that the hydrosol has some degree of solubility in the aqueous medium. Given that the hydrosol does possess some degree of solubility in the aqueous medium, it is the examiner's position that the hydrosol meets the requirement of the present claims which are open to any degree of solubility in the aqueous medium, i.e. from partial to complete. That is, the requirement in the present claims that the graft copolymer is soluble in the aqueous medium does not require that the graft copolymer is completely soluble in the aqueous medium. Further, given that the presently claimed graft copolymer is insoluble in water and given that the presently claimed aqueous vehicle is mostly water, it would appear that applicants' graft copolymer is also not completely soluble in the aqueous vehicle.

Applicants argue that while Ma et al. '014 disclose that the hydrosol is made from the same monomers as presently claimed, this does not take into account the fact that polymers can be made with different proportions of monomers or different combination of monomers which will ultimately effect the solubility properties of the polymer.

It is agreed that difference proportions of monomers will ultimately effect the solubility properties of the hydrosol or graft copolymer of Ma et al. '014. This is, in fact, what is taught by Ma et al. '014 as well as the present invention.

Specifically, Ma et al. '014 teach that the hydrosols contain some amount of functional groups, i.e. hydrophilic monomers, that control the solubility of the hydrosol in the aqueous medium and that this solubility can be and is fine tuned by the kind and amount of functional groups present. Page 4, lines 26-29 of Ma et al. '014 disclose that a balance must be struck between on the one hand, having too few functional groups that would fail to prevent the hydrosol polymer from self-stabilization and, on the other hand, having too many functional groups that would cause the polymer to dissolve in the aqueous medium. Controlling solubility is also recognized in the present specification, page 6, lines 32-34, which discloses that by adjusting the hydrophilic/hydrophobic balance of the polymer, the solubility of the polymer in aqueous vehicle can be tailored.

Further, it is significant to note that Ma et al. '014 discloses that the hydrosol or graft copolymer contains macromonomers obtained from functions groups such as ethoxytriethyleneglycol methacrylate, methoxypolyethyleneglycol methacrylate, etc. which are identical to the monomers used to obtain the macromonomer side chains of the graft copolymer of the present invention wherein the water solubility of these macromonomers, by applicants' own admission on page 4 of the present specification, enables the graft copolymer to be miscible in the aqueous vehicle. In light of this overlap, one of ordinary skill in the art would conclude that the presence of the same functional groups in the hydrosol of Ma et al. '014 would impart solubility to the hydrosol in the aqueous vehicle as required in the present claims. Given that there is no requirement in the present claims that the graft copolymer have complete solubility in the aqueous vehicle, a graft copolymer such as that disclosed by Ma et al. '014 which has even

some degree of solubility in the aqueous vehicle, would meet the solubility requirement of the present claims.

Applicants argue that partial solubility of side chains of the hydrosol of Ma et al. '014 in water is not solubility in aqueous medium as required in the present claims. Applicants argue that just because pieces of the polymer have solubility does not make the polymer soluble.

However, the presently claimed graft copolymer comprises hydrophobic backbone which serves as water-insoluble portion of the graft copolymer and non-ionic hydrophilic side chain which comprises macromonomers which enable the graft copolymer to be soluble in the aqueous vehicle. This appears to be the same type of graft copolymer disclosed by Ma et al. '014, i.e. hydrophobic backbone and macromonomer side chains. Thus, the presently claimed graft copolymer would appear to possess the same type of partial solubility as the graft copolymer of Ma et al. '014. Clarification is requested.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

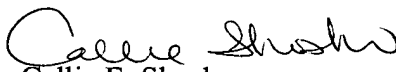
Art Unit: 1714

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
July 25, 2003